REMARKS/ARGUMENTS

Applicants amended claim 2 to correct a grammatical error by removing an extraneous instance of "the".

Applicants amended claim 30 to change the dependency to the base "article of manufacture" claim, claim 25.

1. Provisional Obviousness Type Double Patenting Rejection

The Examiner provisionally rejected claims 1-33 on grounds of obviousness-type double patenting (ODP) over the claims of Application No. 10/637,305 ("Copending Application"), filed on August 8, 2003. (Final Office Action, pgs. 2-4)

Applicants note that the present application was filed earlier than the Copending Application. Applicants will take action at a later date with respect to this ODP rejection if necessary as provided in the Manual of Patent Examination and Procedure (MPEP) Sec. 804(I)(B)(1), pgs. 17-18 (Rev. 5, Aug. 2006)

2. Claim 1-33 are Patentable Over the Cited Art

The Examiner rejected claims 1-33 as obvious (35 U.S.C. §103) over Vepa (U.S. Patent No. 6,490,632) in view of Bain (U.S. Patent Pub. No. 2004/0205250). Applicants traverse.

Claims 1, 14, 20, and 25 concern processing a packet to transmit on a network in a host system including a plurality of network adaptors, and require: receiving at a receiving network adaptor a packet; implementing, within the receiving network adaptor, a load balancing algorithm to select one of the network adaptors to transmit the received packet; and if the selected network adaptor is not the receiving network adaptor, then forwarding, with the receiving network adaptor, the received packet to the selected network adaptor.

The Examiner cited col. 7, lines 5-20 and col. 8, lines 38-53 of Vepa as teaching the claim requirement of implementing, within the receiving network adaptor, a load balancing algorithm to select one of the network adaptors to transmit the received packet. (Final Office Action, pg. 4)

The cited col. 7 mentions that a server is coupled to a plurality of network interface cards (NICs) to provide a link between the server and a network, and that any number of NICs may be used and integrated into the server or externally coupled. Nowhere does this cited col. 7

anywhere teach or suggest that one of the NICs implement a load balancing algorithm to select one of a plurality of network adaptors to transmit the received packet.

The cited col. 8 mentions that the server includes a software element referred to as load balancing scheme 335 to intercept all packets and select one of the plurality of NICs to use to transmit the packet. In FIG. 4, the load balancing scheme 335 is shown as external to the network cards, not internal.

Nowhere does the cited col. 8 anywhere teach or suggest the claim requirement that a network adaptor implement a load balancing algorithm to select one of the network adaptors to transmit the received packet. Instead, the cited col. 8 has a software element in the server do the load balancing algorithm to select one NIC (network adaptor) to use.

Applicants further submit that Vepa teaches away from the claim requirement that the receiving network adaptor implement the load balancing algorithms to select one of the network adaptors because Vepa mentions that "[b]y integrating load balancing scheme 335 into server computer system 190, the present embodiment of the present invention takes advantage of the abundant resources (e.g., processing power and memory) available in a server computer system." Thus, the cited Vepa discusses and concerns implementing the load balancing scheme in the server, not the receiving network adaptor as claimed.

The Examiner cited col. 10, lines 8-35 of Vepa as teaching the claim requirement that if the selected network adaptor is not the receiving network adaptor, then forwarding, with the receiving network adaptor, the received packet to the selected network adaptor. (Final Office Action, pgs 4-5),

The cited col. 10 discusses the benefits of the load balancing scheme as evenly distributing outgoing packets over the NICs, to establish an affinity between a NIC and a client computer system, distribute client traffic, etc.

Nowhere does the cited col. 10 teach or suggest that if the load balancing algorithm implemented in the first network adaptor does not select the receiving network adaptor that the receiving network adaptor forwards the packet to the selected network adaptor. The cited col. 10 discusses a software element selecting one NIC and then sending a packet to the selected NIC. There is no teaching in the cited col. 10 that one NIC implements a load balancing algorithm to select another NIC and then forwarding the packet to that selected NIC.

In the Final Office Action, the Examiner found that Vepa "is silent regarding load balancing algorithm is being utilized and also utilized the load balancing algorithm to select which port to transmit the data to" (Final Office Action, pg. 5) The Examiner cited paras. 0035, 0038, 0039, and 0042-005 of Bain to address the shortcomings of Vepa. Applicants traverse and submit that Bain, as well as Vepa, fail to teach or suggest that if the selected network adaptor is not the receiving network adaptor, then the receiving network adaptor forwards the received packet to the selected network adaptor.

The cited Bain mentions that a server (or interface node) includes an external network load balancing adaptor that executes a load balancing algorithm to determine whether a received request is accepted by one of the servers. Each server (interface node) also includes an internal network load balancing adaptor that executes a load balancing algorithm to ensure that the server that accepts a response from the published server is the same server that accepted the external client request. The cite para. 38 discusses routing a message to a published server. Para. 39 mentions that a response message is routed through the network to a cluster of ISA servers. Messages are mapped to the appropriate NLB/ISA server in a cluster.

Although the cited Bain mentions that an external network load balancing adaptor determines whether a request is accepted by one of the servers, nowhere does the cited Bain teach or suggest that if the selected network adaptor is not the receiving network adaptor, then the receiving network adaptor forwards the received packet to the selected network adaptor. For instance, the cited Bain does not teach or mention that a server (or network adaptor) forwards a message to another one of the servers to transmit.

In fact, Applicants submit that Bain teaches away from the network adaptor or server (interface node) receiving the message from forwarding the packet to a selected network adaptor or server selected by the load balancing algorithm. Bain mentions and shows in FIG. 5 that each server 370a, 380a, 390a receives a message from the external client and that each executes the load balancing algorithm to determine whether the client request is accepted by one of the servers. (Bain, para. 35). Bain mentions the result that the load balancing algorithm determines which ISA server accepts the request message. (para. 36). Thus, in Bain, each of the servers executes the load balancing algorithm to determine which server accepts the message. This does not teach or suggest the claim requirement that the network adaptor (or server of Bain) executes the load balancing algorithm to select a network adaptor and that if the selected network adaptor

is not the receiving network adaptor, then the receiving network adaptor forwards the received packet to the selected network adaptor.

Accordingly, claims 1, 14, 20, and 25 are patentable over the cited art because the cited Vepa and Bain do not teach or suggest all the requirements of these claims.

Claims 2-7, 15-19, 21-24, and 26-30 are patentable over the cited art because they depend from one of claims 1, 14, and 25, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional ground of patentability over the cited art.

Claims 2, 15, 24, and 26 depend from claims 1, 14, 20, and 25, respectively, and further require determining, with the receiving network adaptor, whether the receiving network adaptor is a primary network adaptor or a secondary network adaptor; and transmitting, with the receiving network adaptor, the received packet over the network if the receiving network adaptor is the secondary network adaptor, wherein the load balancing algorithm implemented in the receiving network adaptor selects one of the network adaptors in response to determining that the receiving network adaptor is the primary network adaptor.

The Examiner cited col. 13, lines 25-41 of Vepa as teaching the additional requirements of these claims. (Final Office Action, pg. 5-6) Applicants traverse.

The cited col. 13 mentions a fault tolerance module to determine whether a NIC is functioning to maintain a list of NICs that are active, and adds and removes addresses depending on the status of the NICs.

Nowhere does the cited col. 13 anywhere teach or suggest that a network adaptor (or NIC) itself transmit the packet if it determines it is a secondary network adaptor and that a load balancing algorithm in the receiving network adaptor selects' one of the network adaptors if the receiving network adaptor is the primary one. Instead, the cited col. 13 discusses how a list is maintained on the status of the NICs. The cited col. 13 does not teach that one of the NICs perform the claimed load balancing and forwarding operations depending on the NIC determining that it is a primary or secondary network adaptor.

The Examiner further cited the above discussed Bain with respect to these claims. (Final Office Action, pg. 7) Applicants traverse.

As discussed, the cited Bain discusses that each server (interface node) has an external network load balancing algorithm to determine the server (interface node) to send a message from a client to a publishing server and an internal load balancing algorithm to ensure that the server that accepts a response from the published server is the same server that accepted the external client request. This does not teach or suggest that a receiving network adaptor determine whether it is a primary or secondary network adaptor, and that the load balancing algorithm in the receiving network adaptor selects one network adaptor if the receiving network adaptor is the primary network adaptor. Instead, in the cited Bain, the internal load balancing algorithm is used to ensure that the server (interface node) receiving a message from a published server is the same as the server (interface node) that received the request from an external client.

Accordingly, claims 2, 15, 24, and 26 are patentable over the cited art because the additional requirements of these claims are not taught or suggested in the cited Vepa and Bain.

Claims 3 and 27 depend from claims 2 and 26, respectively, and further require that only the load balancing algorithm implemented in the primary network adaptor selects one of the network adaptors.

The Examiner cited the above discussed col. 13 of Vepa as teaching the additional requirements of these claims. (Final Office Action, pg. 7) As discussed, the cited Vepa discusses determining and maintaining a list on the status of NIC cards. Nowhere does the cited col. 13 anywhere teach or suggest that only the load balancing algorithm implemented in the primary network adaptor selects one of the network adaptors. The cited Vepa does not teach or suggestion that only the NIC does the load balancing to select between NICs.

The Examiner again cited the above discussed Bain with respect to these claim requirements. (Final Office Action, pg. 7). As discussed, the cited Bain discusses that each server (interface node) has an external network load balancing algorithm to determine the server (interface node) to send a message from a client to a publishing server and an internal load balancing algorithm to ensure that the server that accepts a response from the published server is the same server that accepted the external client request.

There is no teaching or mention in the cited Bain that only a load balancing algorithm in a primary network adaptor, or server or interface node designated as primary in the case of Bain, select one network adaptor to use to transmit the packet. Nowhere does the cited Bain teach or

suggest the claimed concept of primary and secondary network adaptors having specific functions as claimed.

Accordingly, claims 3 and 27 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited Vepa and Bain.

Independent claim 8 recites: receiving a packet; determining a primary network adaptor comprising one of a plurality of network adaptors, wherein the network adaptors include the primary network adaptor and at least one secondary network adaptor; and initiating transmission of the packet to the primary network adaptor, wherein the primary network adaptor implements a load balancing algorithm to select one of the primary or secondary network adaptors to transmit the received packet and, in response to the load balancing algorithm selecting one second network adaptor, the primary network adaptor redirects the packet to one of the at least one secondary network adaptors to transmit the.

The Examiner cited the above discussed sections of Vepa cited against claim 1 with respect to claim 8. (Final Office Action, pg. 4) Applicants submit that claim 8 is patentable over the cited art for the reasons discussed with respect to claim 1, including the explanations concerning the primary network adaptor implementing the load balancing algorithms to select one of the network adaptors.

Claims 9 and 10 are patentable over the cited art because they depend from claim 8.

Claim 10 depends from claim 8 and recites that the device driver further performs: detecting a failure of one network adaptor designated as the primary network adaptor; determining an available network adaptor to function as the primary network adaptor, wherein subsequently received packets are transmitted to the determined network adaptor; configuring a register within the determined network adaptor to cause the determined network adaptor to operate as the primary network adaptor and perform load balancing operations.

The Examiner cited col. 13, lines 25-41 of Vepa as teaching the additional requirements of these claims. (Final Office Action, pg. 9) Applicants traverse.

The cited col. 13 mentions a fault tolerance module to determine whether a NIC is functioning to maintain a list of NICs that are active, and adds and removes addresses depending on the status of the NICs.

Nowhere does the cited col. 13 anywhere teach configuring a register within the determined network adaptor to cause the determined network adaptor to operate as the primary network adaptor and perform load balancing operations. Instead, the cited col. 13 discusses how a list is maintained on the status of the NICs. The cited col. 13 does not teach one of the NICs being configured to perform load balancing.

Accordingly, claim 10 provides additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited Vepa.

Applicants submit that claims 31-33 are patentable over the cited art for the reasons discussed with respect to claims 1-13 because claims 31-33 substantially include the requirements of claims 11-13.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-23 and 25-33 are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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